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| 10/788,935      | 02/27/2004  | Ricardo A. Nicholas  | BOEI-1-1224         | 9191             |

7590 06/14/2005  
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EXAMINER

TON, MY TRANG

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2816

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/788,935

Applicant(s)

NICHOLAS, RICARDO A.

Examiner

My-Trang N. Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
MY-TRANG NUTON  
PRIMARY EXAMINER

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "a solid-state switching device" (claim 3) and "the solid-state switching device includes a transistor" (claim 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

Claims 3-4 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3-4, it is unclear what element is referred as "a solid-state switching device" or "the solid-state switching device includes a transistor". In order to avoid any confusion, Applicant is required to particularly point out how this limitation reads on the circuit arrangement of the drawings.

In claim 32, the limitation "wherein the apparatus is potted" is not clearly defined. What is applicant meant by "the apparatus is potted"?

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Anthony (US Patent No. 3,633,043).

Anthony discloses in Fig. 10-11 a dual integrator and wave-shaping circuit including:

Regarding claim 1:

generating (20a) a triangle wave (at 25B, see 132 of Fig. 11) having a predetermined frequency and a predetermined amplitude; and

filtering (20B, also see Fig. 15) the triangle wave (132 at node 25B) to produce a sinusoid (24B, see 133 of Fig. 11) having the predetermined frequency and amplitude.

Regarding claim 2: generating the triangle wave further includes:

generating (25A) a square wave (131, Fig. 11) at the predetermined frequency;

and

integrating (20A) the square wave (131) into the triangle wave (132).

Regarding claim 3: generating a square wave (131) includes activating and deactivating a solid state switching device (26A) (due to indefiniteness, the limitation "activating and deactivating a solid state switching device" cannot given sufficient weight to read over the reference).

Claim 4 is similarly rejected as claim 3: due to indefiniteness, the limitation "a solid state switching device includes a transistor" cannot given sufficient weight to read over the reference.

Regarding claim 5: integrating (20A) the square wave (131) includes inputting a square wave (131) to an operational amplifier (21A).

Regarding claim 6: filtering (20B) the triangle wave (132) passes a signal substantially consisting of a sinusoid at the predetermined frequency and selected harmonics of predetermined amplitudes (133).

The limitation recited in claim 7 is seen to read on the circuits of Anthony.

Claim 8 is similarly rejected as claim 7:

a triangle wave generator (20A) configured to generate a triangle wave (132) having a predetermined frequency; and

a filter (20B, or Fig. 15) configured to receive the triangle wave (132) from the triangle wave generator (20A), the filter (20B) being configured to pass a signal substantially consisting of a sinusoid at the predetermined frequency and selected harmonics of predetermined amplitudes (133).

Regarding claim 9: the triangle wave generator is configured to receive a clock signal (25A, see 131 of Fig. 11).

Regarding claims 10-12: because the claimed structure is fully met by Anthony, the recited functions in claims 10-12 will necessarily be inherent in Anthony.

Regarding claim 13: the triangle wave generator includes:

a square wave generator (circuit apply to 25A) configured to generate a square wave having the predetermined frequency (131); and

an integrator (20A) configured to integrate the square wave (131) into the triangle wave (132).

Claim 16 is similarly rejected as claim 3.

Regarding claim 17: the integrator (20A) receives a square wave (131 at 25A) at an input of an operational amplifier (21A).

Claims 18-19 are similarly rejected as claims 6-7.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthony as applied to claim 8 above.

As noted above, every element of the claimed invention recited in above claims can be seen in the circuit of Anthony. However, this reference does not specifically disclose “in input voltage follower” (claim 14) and “an output voltage follower” (claim 15). However, the input voltage follower or the output voltage follower recited in these claims is only seen as an inverter. It is old and well-known in the art that the inverters are used as buffers or signal inverting purpose. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate inverters to the input and/or output of the circuit for buffering or level inverting purposes.

Claims 20-25, 27, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthony and further in view of Chung (U.S Patent No. 6,825,735).

Similarly as above rejection, Anthony discloses in Figs. 10-16 a dual integrator and wave-shaping circuit including: an integrator (20A) configured to integrate the square wave (131) into a triangle wave (132), and a generalized impedance converter (20B) configured to filter the triangle (132) into a signal substantially consisting of a sinusoid at the predetermined frequency and selected harmonics of predetermined amplitudes (133).

However, this reference does not specifically discloses “a Schmidt trigger oscillator configured to output a square wave” as recited in claim 20.

Chung teaches in Fig. 6 a controllable Schmitt trigger configured to output a square wave (CLK) for the purpose of providing a stable oscillation frequency.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the circuit in Fig. 6 of Chung as the circuit provided clock signal (131) applied to input 25A of Anthony since this involves nothing more than showing the details of what might typically comprise the circuit applied clock signal to input 25A for the purposes of providing a stable oscillation frequency.

Regarding the limitation "an active bandpass filter" or "the active bandpass filter is a second order filter" recited in claims 21-22 is inherent seen in col. 15, lines 7-10.

Claims 23-24 are similarly rejected as claims 14-15.

Regarding the limitation "Schmidt trigger includes a metal film resistor" recited in claim 25, It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the resistors (R1, R2,410) as a metal film resistor for the purposes of having low noise characteristics. See U. S Patent No. 4,508,686.

Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthony further in view of Chung and further in view of Ting (U.S Patent No. 4,390,844).

Anthony and Chung do not specifically disclose "the integrator includes a Teflon film capacitor" as recited in claim 26.

Ting teaches in col. 4, lines 47-51 the use of a capacitor having a Teflon may advantageously avoid polarization effects that can harm acquisition time.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the capacitor 28A as a Teflon film capacitor as



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taught in Ting for the purposes of having a low dielectric absorption constant and high stability over temperature and time.

Regarding "the generalized impedance converter includes a metal film resistor" recited in claim 27, It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the resistor (29B) as a metal film resistor for the purposes of having low noise characteristics.

The same motivation applied to claim 26 is applied to claim 28.

The Schmidt trigger includes an integrated circuit operational amplifier (421 of Chung) as recited in claim 29.

The integrator (20A in Anthony) includes an integrated circuit operational amplifier (21A) as recited in claim 30.

The generalized impedance converter (20B in Anthony) includes an integrated circuit operational amplifier (21B) as recited in claim 31.

Regarding claim 32, due to indefiniteness, the limitation "the apparatus is potted" cannot given sufficient weight to read over the reference. The apparatus is seen to read on Fig. 10 of Anthony.

### ***Conclusion***

The additional references cited in PTOL 892 show further analogous prior art circuitry. This art is deemed relevant (especially U.S Patent No. 4,239,941, U.S Patent No. 3,982,189 and U.S Patent No. 5,243,658) and should be carefully reviewed before any amendment is filed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



My-Trang N. Ton  
Primary Examiner  
Art Unit 2816

June 9, 2005